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The top-down innovative coordination flows in Sophia Antipolis

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Abstract

The theoretical model that has inspired the creation of Sophia Antipolis is governed by a top-down approach. The agglomerations externalities had not sprung up naturally from the dynamics of entreprises located in the cluster. The economic model of Sophia Antipolis is completely different of the traditional innovative district studied by Alfred Marshall (bottom-up approach). The aim of this paper is to understand the coordination mechanisms between enterprises and the main factors of success who made Sophia-Antipolis the largest technology park in the Europe. Such a study presents the Top-down strategy of developpement choosen by the government from the origins of Sophia-Antipolis to promote agglomeration externalities and the increasing returns to adoption gained by firms entering in the park.

Keywords: Clusters, entrepreneurship, innovative pole, network externality, agglomeration effect, Top-down, Bottom-up.

Introduction

Sophia Antipolis was created by the public authorities to attract high value added activities on the French Riviera, in the aim of strengthening a local economy driven historically by tourism. The creation of Sophia Antipolis forty years ago was, from the beginning, strongly supported by the French government by substantial public investments in telecommunication and transportation infrastructure.

The theoretical model that has inspired the creation of Sophia Antipolis is governed by a top-down approach. By a top-Down approach, we mean an approach built on the sheer power of a centralized processor capable of replicate whatever the human intelligence can do. Such a definition of the top-down approach is inherited from Heyman and Leijonhufvud works (1996)[1]. Concerning the setting-up of Sophia Antipolis, the role of such a centralized power was played by the French ministry of Planning.

The innovative pole of Sophia Antipolis had sprung up from a forrest located among the administrative territories of the cities of Valbonne, Antibes, Biot and Mougins[2]. Except many boars and squirrels, this territory had nothing in the seventies that could be qualified as innovative. Sophia Antipolis emerged only due to the strong desire of the French Ministry of planning (top-down approach). The agglomerations externalities, had not sprung up naturally from the dynamics of entreprises located in the cluster. The economic model of Sophia Antipolis is completely different of the traditional innovative district studied by Alfred Marshall (bottom-up approach). Nowadays, the cluster of Sophia-Antipolis is rich of external linkages, but poor of internal relations between the firms.

In this local system of Innovation, a large numbers of actors in different sectors are present but any of them is sufficiently dominant to drive the cluster orientations. In this sense, this Local System of Innovation (LSI) is not reliable in the long run. Very few, almost no technological collaborations can be observed. The sustainability of the Sophia-Antipolis cluster does not really depend on the territory. the weakness of the cooperation between companies of the cluster can be partially explained by the local multinational firms which have their branch facilities located in the local system of innovation but at the same time their head office external to the cluster with main decision taken from outside, limiting the potential for local synergies and local collaboration.

Admittedly, a region needs good infrastructure and a pool of educated talent to develop innovative clusters. Nevertheless, public authorities can't manufacture innovation by putting a set of buildings, financial incentives or transportation facilities next to a university and next to research centres.

In Sophia-Antipolis, much more than in other type of innovative poles, the role of incubators is tremendous. The need of effective incubators was felt from the early years of the park. Their role in a top-down approach of innovation lies in promoting the horizontal coordination between firms located in the cluster. In this intention, they have to compensate the lack of industrial and innovative atmosphere.

[1] Heymann D., Leijonhufvud (1996). P. 156.
[2] The city of Antibes was named *Antipolis* at the time of the Ancient Greek. The word *Sophia* in the Ancient Greek Language means Wisdom.

In this paper we propose to shed light on the necessity to have effective incubators in a technology park like Sophia Antipolis which is characterized by a tremendous lack of coordination between firms.

After presenting the story and key factors of success of Sophia Antipolis (1.), the main coordination channels, between enterprises, are studied (2.). It then become possible to enlight the central role of the incubators in a top-down strategy (3.).

1. The story of Sophia Antipolis from the early stages

Sophia Antipolis was created ex nihilo in the seventies. The French government of that time did not want any more than the economy of the French Riviera is based solely on tourism.

Admittedly, the emergence of a technological sector on the French Riviera is previous to the creation of Sophia Antipolis. During the period between the two world wars, an aeronautic industry was set up in Cannes and such an industry is still very dynamic nowadays. Currently the Thales Alenia Space Company provides communication satellites, and military rockets. During the same period, another technologic center devoted to electromechanics appeared in Nice. The emergence of the electromechanics industry in Nice with prestigious company like *Legrand*, was the breeding ground for the implantation of IBM and Texas Instruments on the hinterland of Nice. During the May 1968 protests, the touristic period on the French Riviera was very bad. The public administration in charge of the economic territorial planification, realised that the reliability of the French Riviera cannot be based on the sole tourism sector. Pierre Laffitte was the first to propose in 1969, the creation of a new industrial cluster on the French Riviera devoted to the promotion of the scientific creativity and the technological transfers among innovative firms.

The underlying strategy which has governed the setting-up of Sophia Antipolis includes three main actors namely, private innovative enterprises, the public University, the regional and local public administrations.

In the early seventies, a semi-public company called Symival was created in the aim of structuring the emerging technopole and 5800 acres were acquired on a virgin plateau located on the administrative territories of the cities of Antibes, Valbonne, Mougins, Biot and Roquefort-les-Pins,Villeneuve-Loubet and Vallauris[3].

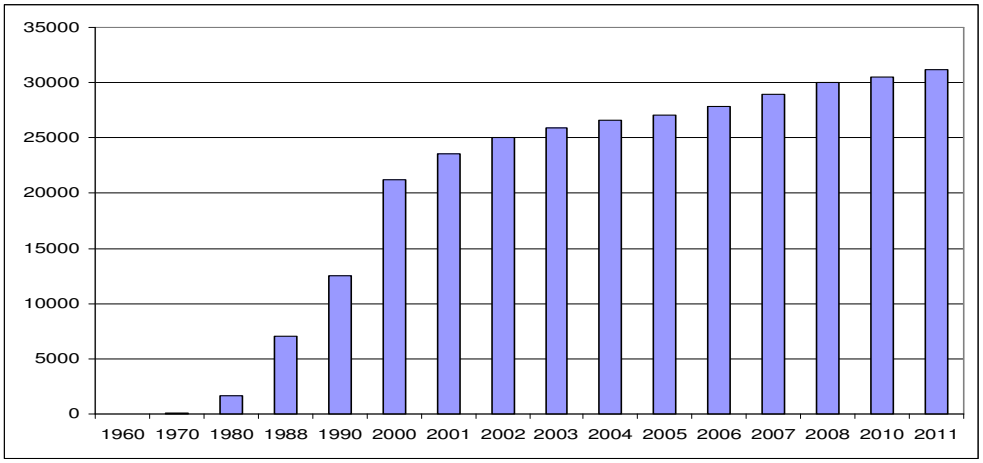
The implantation of the University in Sophia Antipolis was initiated in 1985 with the transfert and the creation of courses for postgraduates students (Master and Doctorate). Nowadays, 2 500 students from undergraduate to postgraduate levels and belonging to one of the 6 faculties in Sophia Antipolis are studying daily in this technological park.

Sophia Antipolis has been firstly composed by entreprises which had a natural propensity to be easily relocated. Therefore, the earliest establishments of companies were in the sectors of computing and electronics (Air-France, Certiam, Organic, Télésystèmes, Questel, Thomson Sintra and Télémécanique). A second wave of company occured in the eighties with the implantation of Nortel, Lucent, Digital Equipment, Compaq... Nowadays, Sophia Antipolis is decidedly oriented to the knowledge economy. Newly relocated or created enterprises in the technological park product much more

[3] Syndicat Mixte pour l'aménagement du plateau de Valbonne (Symival)

immaterial products (software, consulting services…) than real equipments ones. It is in this spirit that the SAP Company was established in early 2000s.

Chart 1: Employment trends in the technology park of Sophia Antipolis



From the early stages of this cluster, newly established firms did not succeed to root their productive activity in the local environment. The geographical proximity did not promote positive externality or any agglomeration effect. The dynamics of this emerging territory was driven by the French ministry of planning through its institution called DATAR.

2. The coordination of activities in the cluster

The underlying theory of Sophia Antipolis is based on the idea that public authorities or economic development institutions by offering financial incentives, can create hubs of activity in specific industrial sectors by bringing businesses, researchers and suppliers together in buildings or industrial parks. Any government has the desire to promote the setting-up of technological park in which an industrial atmosphere is favorable for the outbreak and growth of firms. Sometimes, the industrial atmosphere emerge naturally from bottom-up coordination mechanisms. Such spontaneous emergence - like in the Italian Industrial districts - of the industrial atmosphere were clearly described by Alfred Marshall (1890). The bottom-up approach relies on interacting networks and attempts to make networks evolve (Heymann, Leijonhufvud, 1996). With a Bottom-Up approach the innovative pole is seen as a network of interacting entreprises, each one with less capability to process information than would be required of a central planning institution set to solve the overall allocation problem for the entire system. The Marshall's conceptualization of the industrial districts teaches us that the benefits of agglomeration come from economic externalities. The externalities are the result of specifics characteristics built up over time and which cannot be transferred or replicated[4]. According to Alfred Marshall, enterprises located in the same district may benefit from lower transaction cost or sharing a common labor pool.

[4] Externalities are present when the actions of one agent affect the interests of another agent other than by affecting prices.

Concerning Sophia Antipolis, the French public authorities adopted an economic policy, implemented by the DATAR, which can be qualified as a top-down policy[5]. As recalled by Rani Jeanne Dang (2009), research and innovation in France have always been characterised by the intervention of public authorities. The term of "Colbertist State" is generally used to qualify the French system of innovation and research. The Colbertist state is a model based on the intervention of the state and which gives the priority to major civil programs, that put forward the supremacy of firstly the separation between research and firms and secondly the monopolisation of public supported by some large industrial groups. The Intervention of public authorities promotes the economic development and competitiveness of regions and cities by creating new business opportunities, by fostering entrepreneurship and incubating new innovative companies, by generating knowledge-based jobs, by building attractive spaces for the emerging knowledge workers and by enhancing the synergy between universities and companies.

The Top-down strategy is not a French specificity. Others innovative clusters governed by a top-down approach exist in many countries. For instance, we can mention the "Parc Agrari del Baix Llobregat" in Spain, The "Technologiepark Ostfalen Magdeburg-Barleben" in Germany, The Japan's science city in Tsukuba and the "Silicon Pyramid" in Egypt[3]. Russia is currently setting-up a government-planned "science city" close to Moscow, that it hopes will one day rival Silicon Valley's. Over $200 million are spent by the public authorities to build a technology hub with innovative and competitive companies.

Table 1: Workforce repartition in sophia Antipolis in 2011

Activity	Workforce (in %)
Information technology (IT)	45,8
Higher Education/research	8,7
Health sciences/Fine chemicals	7,8
Building	6,1
Common services	4,9
Primary and secondary education	2,6
Consulting	2,4
Cleaning	2,0
Equipment for home/office	1,9
Miscellanous	1,8
Health professions	1,6
Real estate	1,5
Public transportation	1,2
Others (<1% for each sector)	11,8
Total	**100,0**

[5] The "Délégation interministérielle à l'Aménagement du Territoire et à l'Attractivité Régionale" (DATAR) that is the Interministerial Spatial Planning and Regional Attractiveness prepares, promotes and coordinates the policies territorial planning held by the state.

The government doles out money to companies that it selects and appoints government administrators for the management of the cluster. Michael Porter (1990) assets that a governmental planning policy can create something from nothing, turning, for example, a forest (like in Sophia-Antipolis in France) into a technological park including highly competitive, innovative firms. By focusing on the population of enterprises in Sophia Antipolis, we can observe that only four different categories of economic activities represent 70% of the total workforce of the technological park namely, information technology, higher education/research, health science/fine chemicals and building (see table 1).

23,9% of the enterprises in Sophia Antipolis belong to the Information technology (IT) sector but such a percentage matches 45,8% of the total number of the workforce in this technological park (see table 2). More than 300 Enterprises in the sector of the information technologies (like AMADEUS) represent nearly an half of the total workforce of the park. We can cast doubt of the technological aspect of the building activity. If in term of workforce, 70% of the workers are distributed into four different economic activities, the range of the different economic activities in Sophia Antipolis is much wider.

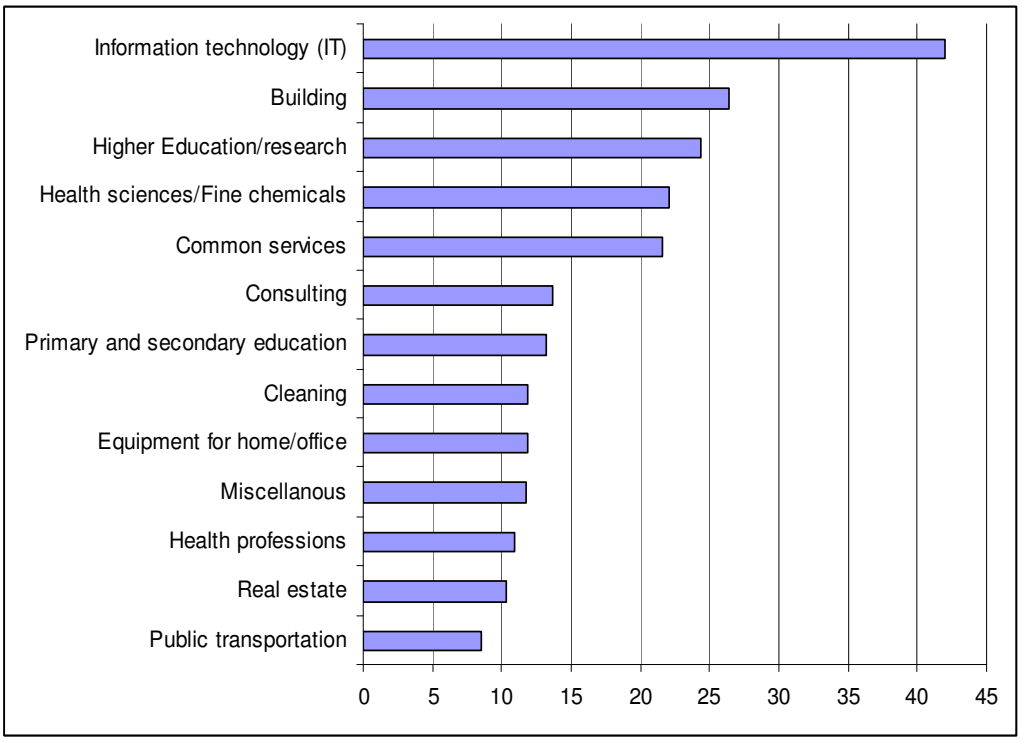
Table 2: enterprises repartition in Sophia Antipolis in 2011

Activity	Entreprises (in %)
Information technology (IT)	23,9
Higher Education/research	7,9
Health sciences/Fine chemicals	7,8
Building	5,1
Common services	4,9
Primary and secondary education	4,3
Consulting	3,8
Cleaning	3,6
Equipment for home/office	3,5
Miscellanous	3,4
Health professions	3,2
Real estate	3,1
Public transportation	3,0
Catering	1,9
Earth Sciences	1,9
Publishing, advertising, communication	1,7
Travel agency	1,3
Cars	1,3e
Security	1,2
Hotels	1,1
Associations, clubs	1,0
Others (<1% for each sector)	10,8
Total	**100,0**

The technological park of Sophia Antipolis is characterized by the predominance of the small and medium sized enterprises (SME's). The number of employees per firm is on average 13 with very large disparities (see Chart 2).

Through different criteria of segmentation (size, workforce...), we can observe the dominant share of the Information technology sector. Such IT sector includes 325 firms and hires 13.425 people.
Even if the average number of employees in the IT sector is 42, about thirty enterprises hire more or less 100 people. The five biggest employers in Sophia Antipolis belong to the IT sector (see table 3). Of a total of 325 companies, the 10 biggest enterprises in term of workforce in the IT's sector represent 42.5% of the total workforce of this sector.

Chart 2: Average number of employees per firm in Sophia Antipolis



Among the five biggest companies, three of them were forced by the public administration to locate in Sophia-Antipolis from the early years of the technological park. These two enterprises are Air-France, Thales (formerly Thomson) and Schneider Automation (formerly Télémécanique) (Table 3). It is somewhat disturbing to note that none of these five companies has its headquarters in Sophia Antipolis. This is a very negative factor for the coordination of productive activities within the technology park.

Admittedly, 65% of the companies in Sophia Antipolis have located their headquarters in the technologic park but the 35% remaining percentage correspond to the biggest companies in term of industrial activity and workforce. In the aim of promoting the IT sector in Sophia Antipolis, the French Government decided to create a pole of competitiveness devoted to secure networks (Solutions communicantes Sécurisées)[6].

[6] http://www.pole-scs.org/

The Interministerial Regional Planning and Development Committee (CIADT) decided in December 2002 a new industrial strategy based on the development of competitive clusters[7].

Table 3: The 5 biggest employers in Sophia Antipolis

Name	Effectif total	Activity
AMADEUS	2035	Product definition, development & management of the computerised reservation system intended for travel agents (airlines, hotels, car rentals, railways...)
THALES UNDERWATER SYSTEMS SAS AND Thales Service SAS	826	Holding involved in sonar business (antisubmarine warfare, sonars, signal and data processing) Consultants in data processing, integration of systems
ASTEK Sud Est	550	Software house for the Telecom, E-services, Hard/Soft-codesign and space sectors
AIR FRANCE - ETABLISSEMENT INFORMATIQUE	438	Product definition, development and operation of worldwide data processing systems for both passenger and freight traffics
SCHNEIDER AUTOMATION	420	Design and development of programmable automated systems and associated software

Such a policy lies on increasing the French industrial potential and on creating the conditions to foster the emergence of new activities with a high international profile. This strategy is based on active partnership between Small and Medium Sized Enterprises (SMEs), research centres and training institute (either from the public or the private sector). It is expected that such cooperation promotes the emergence of synergies and cooperative efforts. A competitive cluster is a partnership association built on innovative projects. The French poles of competitiveness are inherently considered as devices of skills and knowledge networking that aims to link public researches institutes, Universities, SME's and large firms ("grand comptes") in order build innovative products that can be developed, marketed and can compete at the international level. This type of structure allows SMEs to develop, and researches to be directly applied on the industrial sector.

[7] The Interdepartmental Committee for land planning and regional attractiveness (Comité interministériel d'aménagement, de développement du territoire et d'attractivité régionale, CIADT), chaired by the Prime Minister decides the orientation of national policy planning.

By referring to Hobday works (Hobday, 2000), the French economic policy of poles of competitiveness can be qualified as projects based organisations (PBOs). Each competitive cluster draws up a five-year plan, based on a vision shared by the various stakeholders. With the plan, the competitiveness cluster can develop partnerships between the various stakeholders, constructs shared strategic R&D projects that can benefit from public funding - particularly the Interministeriel Fund (FUI) - and promotes an overall environment favourable to innovation and to the competitiveness cluster's stakeholders.

Governments all over the world have invested huge amount of public money to attract industries they consider strategic[4]. According to Porter (1998), clusters are defined as: "geographic concentrations of interconnected companies and institutions in a particular field.". Furthermore, Porter (1990) affirms that the nation's competitiveness is directly linked to the attractiveness of their territorial productive conditions. The main idea of cluster policies promoted by the DATAR in France is very simple: geographic proximity facilitates the collective innovation. In a Local System of Innovation (LSI), positive externalities can emerge more easily. Sophia-Antipolis on the French Riviera is a concrete example of the benefits of the geographical proximity of innovative firms. The "technopolis" was created to attract high value added activities in the region, in the aim of strengthening a local economy driven historically by tourism. The creation of Sophia Antipolis forty years ago was, from the beginning, strongly supported by the French government by substantial public investments in telecommunication and transports infrastructure. There is a phenomenon of agglomeration in any local system of innovation.

Even in competitions, firms tend to gather themselves in a small territory. Agglomeration externalities have positive productivity effects. According to Paul Krugman (1991), the agglomeration externalities arise from an interaction between economies of scale that generate increasing returns, transportation costs, and regional market potential. The concept of "increasing returns to adoption" (IRA) referring to a chain of development where a system or artefact becomes increasingly more attractive to potential users and its generalization increasingly beneficial to them. A major part of the high technology market is subject to increasing returns to adoption. IRA are also presents in any technological park. Like the model presented by Arthur (1989), more entreprises in a Local System of Innovation is, the more attractive it becomes. The increasing return to adoption effect is at work.

The best example of a successful positive externality is the birth of the firm Amadeus in Sophia Antipolis. Some 2 035 People are working in Sophia Antipolis for the Amadeus Company. Amadeus emerged thanks to the innovative atmosphere of the Sophia Antipolis technopole. Agglomeration externalities foster labor productivity, rents, and wages in regions with high economic density. Consequently agglomeration externalities can be considered as public goods. Like for any public goods, public authorities must intervene to promote positives externalities and increasing returns to scale.

Despite to appearances and some success stories like Amadeus, the role of the French public authorities for developing positives externalities in Sophia Antipolis was not so successful. Unfortunately, the cluster of Sophia-Antipolis is rich of external linkages, but poor of internal relations between the firms.

In this local system of Innovation, a large numbers of actors in different sectors are present but any of them is sufficiently dominant to drive the cluster orientations. In this sense, this Local System of Innovation is not reliable in the long run. Very few, almost no technological collaborations can be observed. The sustainability of the Sophia-Antipolis cluster does not really depend on the territory. There is no interdependence among local actors or with the immediate environment. According to Christian Longhi (1999), the weakness of the cooperation between companies of the cluster can be partially explained by the local multinational firms which have their branch facilities located in the local system of innovation but at the same time their head office external to the cluster with main decision taken from outside, limiting the potential for local synergies and local collaboration. Admittedly, a region needs good infrastructure and a pool of educated talent to develop innovative clusters. Nevertheless, public authorities can't manufacture innovation by putting a set of buildings, financial incentives or transportation facilities next to a university and next to research centres.

The endogenous factors able to promote growth in the technological park are on the one hand, the existence of communities of practice and other hand, strong and reliable interactions between the different communities of practice. Somehow, there is a community of practice within the engineering sector of computing, Information and Communication. There is some mobility of engineers in the various businesses of the park. In addition, many research projects with universities and public research laboratories, promote the emergence of a common culture.

This community of practice is reinforced by a rich cultural context (many cultural, religious and sports associations). The English language plays an important role in the emergence of a community of practice in the IT sector. Even if Sophia Antipolis is in France, the working language is English for the main companies in the IT sector. A large number of expat workers strengthens the anglo-saxon character of Sophia-Antipolis. On the French Riviera, in the English Langage, a local radio is broadcasted with specific programs locally set-up, a weekly newspaper and a monthly magazine are published. Moreover, people living and working in Sophia Antipolis can shop at a British bookseller, at a British supermarket and even use the services of many British craftsmen in many different activities.

3. The Top Down approach and the role of the Incubators

Different types of incubators exist in Sophia-Antipolis. First of all, we have to notice that the term incubator in France is equivalent to a *pre-incubator* in the anglo-saxon sense. Then a start-up which meets success in a French pre-incubator can follow its activities in a business incubator called “pépinière”. Since in France the research is mainly held by public structure, the government decided in 1999 to create pre-incubators dedicated to valuation of public research. This type of pre-incubators, called “Allegre incubators” referring to the name of the French education ministry of this period (Prof.Dr. Claude Allègre), have the mission to favour the transfer of technologies developed in the public research laboratories towards the private through new business start-up[8]. These pre-incubators can propose a coaching, the financing of outside services

[8] The public incubators "Allegre" depend on the Ministry of Higher Education and Research and aims to promote research with the creation of private enterprise.

such as a market study or patent registration, an integration to their close networks and a hosting. Their generally principle is a refundable advance in case of success for projects holder. Several Engineer or Business Schools, which are quite wealthy in France and also some public research institutes have created their own pre-incubators. Their aim is to support the projects of new business start-up of their former students or their researchers.

Some pre-incubators are dedicated to a specific public (women for example) and their existence is related to the local economic context and they are financed by public actors such as economic development agencies or competitiveness poles. In the end, some private pre-incubators exist. These structures differ from the first ones by their will of profitability. They work as a general rule by taking part with a capital of the company to realize a capital gain. Their economic model having survived with great difficulty the explosion of the internet bubble, the great majority of these incubators disappeared or reconverted as venture capital or in consulting companies. Several other structures (public, private or associative) are involved in the supporting the creation of the new business start-up. They are public or semi-public structures like the Business Innovation Centre (BIC)[9]. The BIC was created by the European Commission to foster innovation in the companies in order to strengthen an economic dynamics leaning on the local potential. BIC are distributed in the whole of the countries of the European Union. 50 technology parks, 33 BIC and 30 pre-incubators for public research are now linked by an association called RETIS. The vision is that these three structures have a complementary role (see chart 3).

In Sophia-Antipolis are located :

- One 'Allegre' pre-incubator' called "*Incubateur PACA Est*"
- The Business Innovation Centre (BIC) called "*Antipolis Innovation Campus*"
- The SKEMA Business School pre-incubator
- The Telecom Paris Tech pre-incubator
- Several private business centres that host enterprises providing them services

What we can observe is that the incubators of Sophia Antipolis are focused on research and innovation. Other structures are dedicated to 'traditional' entrepreneurship (handcraft, commerce and trade). For example a 'Couveuse' is a structure dedicated to support small business projects. An entrepreneur who as such a project can start his activity being supported by the 'couveuse' (council, formation, logistic) and will have very few administrative obligations so that he will be able to test quickly his business model during a short period of few months : he will contract with the 'Couveuse' so that he will be allowed to use the company registration number of the structure as if it was its own.

They were born of the Law on Innovation and Research of the July 12, 1999. 28 incubators certified by the Department are spread throughout France.
To benefit from this type of device, the project must be backed by a public research laboratory or be winner of the national support for the creation of innovative technology companies, organized by the Ministry of Higher Education and research.Allègre incubators offer assistance for a period of 24 months.

[9] http://www.ebn.be/

Table 4 : The actors concerned by an entrepreneurial project according to the target activity

Activity Targeted	Incubation structure dedicated	Actors dedicated
Handcraft (hairdressing, plumber, etc…)	Couveuses, pépinière des communautés d'agglomérations	Chambre des Métiers et de l'Artisanat
Commerce and trade	Couveuses, pépinière des communautés d'agglomérations	Economic Chamber of Commerce
Innovative business	IBEC	Economic Chamber of Commerce, OSEO
Research valorization	State Incubators	OSEO

As pointed out by Romana Rauter, the coordination of economic activities in the cluster lies partly on the capacity of SME's to develop their absorptive capacity. Admittedly, the incubators have a disseminating capacity of knowledge but the SME must be able to absorb such a disseminated knowledge (see Cohen and Levinthal, 1990).

Table 5: Impact of the incubators in Sophia-Antipolis on the main factors of growth traditionally at work in any innovative pole

Factors of growth	Impact of the incubators	Main explanation
Agglomeration externalities	Medium	Few incubated firms collaborate together and gather information. Very few agglomerations externalities excepting the Amadeus Company can be observed.
Externalities from education	Very strong	The University of Nice - Sophia Antipolis is the main actor in the promotion of entrepreneurship in the cluster
Networks externalities	Weak	The increasing returns to adoption obtained by incubated firms are not really observed. After several decades, Sophia Antipolis cannot be qualified as an innovative network enable to generate positive externalities.

Non pecuniary externalities (information spillover)	Medium	An innovative atmosphere exists in the cluster but mainly rely on informal relationships betweens workers. For instance in sports, in cultural or religious events.
Factors of growth	**Impact of the incubators**	**Main explanation**

Conclusion

The fundamental factor for a successful innovation transfer system in Sophia Antipolis lies in the existence of a public-private partnership. Thanks to a strong commitment of the Government or its local representatives, innovation transfer systems can emerge. The Government is the only legitimate body to guaranty space organization. Consequently, one of the main responsibilities of the public authorities is to facilitate the flow of informations between different actors, to be a network mediator, and to assist firms through the sharing of information. Nevertheless, the successful of such a *top-down* strategy relies on the ability to set up a reliable coordination between firms located in the cluster.

The French authorities pride themselves on having created in Sophia Antipolis a "Silicon Valley" in comparison with the California's famous technopolis in the United States. Admittedly, in terms of workforce, Sophia Antipolis is the biggest Technological Park in The Europe but the comparison reaches its end to that point. Concerning the famous technological park Silicon Valley in California, even if the public authorities helped, by financial incentives or transportation facilities, to the economic growth of this territory (top-down approach), the innovative atmosphere which had emerged from this park is rooted in the private dynamics of the innovative SMEs (Bottom-up approach).

After four decades of existence, the reliability and the sustainability of Sophia-Antipolis is still to be proven. Admittedly, the incubators, the industrial atmosphere, the University environment and agglomeration effects are very important for the success of the Top-down strategy that governs the development of Sophia Antipolis but all these factors can not alone explain the continuing growth of this park.

The world is full of spaces offering tax incentives, efficient means of transport and a pleasant living environment. The factors of attractiveness of the Sophia Antipolis technological park are actually to be found outside the park. Expatriate workers who arrive in France with their families can benefit from education and health systems virtually free. For a salary equal to their country of origin, their disposable income is much more important. This is one of the main reasons why France is the first home in Europe for foreign direct investment.

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